

Date: Sun, 2 Oct 94 04:30:17 PDT
From: Ham-Digital Mailing List and Newsgroup <ham-digital@ucsd.edu>
Errors-To: Ham-Digital-Errors@UCSD.Edu
Reply-To: Ham-Digital@UCSD.Edu
Precedence: List
Subject: Ham-Digital Digest V94 #327
To: Ham-Digital

Ham-Digital Digest Sun, 2 Oct 94 Volume 94 : Issue 327

Today's Topics:

9600 and greater on Packet!
a scary idea for the DEC Rainbow
BAYCOM & MUD
Control Program?
Graphic Packet in French
Mail forwarding on MFJ 1270
Paket 6.1?? (3 msgs)
Question: data bandwith calculations?
WANTED: CELLULAR ENGINEER

Send Replies or notes for publication to: <Ham-Digital@UCSD.Edu>
Send subscription requests to: <Ham-Digital-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Digital Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-digital".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 29 Sep 1994 20:48:58 GMT
From: don@weather.brockport.edu (Don Schleede)
Subject: 9600 and greater on Packet!

I have a few questions for the technical people out there. I am
thinking about designing a packet modem that will give transfer rates
around 56k!

First of all, most of the packet modems aout there do FSK at 1200bps.
What really makes me sick is that for 9600bps, people are still doing FSK
and modifying the radio's to get a bigger bandwidth. (I believe this is the
case) Because FSK only uses two levels of representation, why can't we use
some other type of system that will give us multiple levels of encoding.
So with the same bandwidth, we could get "more" information.

To calculate some of this, I need to know the typical ballpark Signal to Noise (S/N) ratio for a two meter FM with full quieting audio signal. I also need to know the bandwidth, however, I probably can assume that it is at least 12khz. Even without knowing these numbers, I am fairly confident that it is better than the 4khz of a phone line (The phone co guarantees 30db s/n) The other problem that we might have is synchronization of the signal. Since we are dealing with a half duplex channel, this could be a serious problem, however there are ways to get around this. Even if you couldn't get around the sync problem, the modem would still work well for Full duplex channels. This would be great for the backbone network at least.

I would implement most of the signal processing in a TI dsp chip. This would make the modems kind of expensive, But definately worth it! However the chip count would be low. AND (a BIG and) you could change the software and speed the modem up without buying a NEW modem. We could also be backward compatable with the 1200bps modems now.

Other than the problems of S/N ratio, and the receiver syncing on the transmitter EVERY time you want to transmit data, and the writing of the software, which I can take care of (hopefully). Can anyone think of another problem that would sink this idea?

```
*****
Name: Donald L. Schleede                               Snail-Mail:
Research Associate/Programmer                          Dept. Earth Sciences
E-mail Addresses:                                     SUNY Brockport
don@weather.brockport.edu                             Brockport, NY 14420
dschleede@unidata.ucar.edu                            Twisted Pair:
Planet: Earth                                          (716) 395-5718
*****
```

Date: Sat, 1 Oct 1994 09:31:59 GMT
From: jp11@vectorbd.com (Jim Lill)
Subject: a scary idea for the DEC Rainbow

: Dwight A. Schwartz <ds@feldspar.geology.uiuc.edu> wrote:

: Well, I used to use the Rainbow and liked it, but that's not what
: this is about, exactly. :)

: > My idea is this: MS-DOS Kermit for the Rainbow contains source code
: >which directly handles the Rainbow's communciations hardware. KA9Q appears
: >to contain the code needed to run SLIP on an IBM-PC style MS-DOS machine.

The Heath Z100 is in the same boat. There's fossil drivers for both of them.

I often thought that a fossil device in nos might be the answer. That is
"attach fossil...."

Having that, you'd be able to load the fossil TSR and let nos "talk" thru
it.

I'm not sure that alone would do it as there may be some video specific
stuff in some nos versions.

--

```
~~~~~  
Jim Lill / Vector Board BBS \  
jpl1@vectorbd.com \ 716-544-1863/2645 /  
wa2zkd@wb2psi.#wny.usa.na GENie: ZKD
```

Date: 1 Oct 1994 17:04:09 GMT
From: da884@cleveland.Freenet.Edu (David Toste)
Subject: BAYCOM & MUD

y
AN> : I want to start a MUD on packet radio. Now I'm looking for
AN> MUD source code,
AN>
AN> ^^^ Forgive the ignorance but what is a MUD?

MUD some call it Multi User Games. Sort of like Games found on DOOR's on
some BBS;s

--

David Toste [VE3TOS] AMPRnet : ve3tos@ve3tos.ampr.org
Don Mills, Ontario Packet : ve3tos@va3bbs.#scon.on.ca.noam
!* SOON TO BE RELEASED *! Internet : da884@cleveland.freenet.edu
Author of SWLOGit (The Ultimate SWL'ers ToolBox) Fidonet: 1:250/930

Date: 1 Oct 1994 04:48:30 GMT
From: mdwyer@lamar.ColoState.EDU (Michael Dwyer)
Subject: Control Program?

daniel wright (djw@unlinfo.unl.edu) wrote:
: Hello to all.....
: I just took delivery on a brand new fancy-schmancy computer for
: use in the shack and for use on the digital modes. Now I am wondering:
: what is the best...or at least,very good software for use on the

: digital modes and for logging/contesting(on rtty),etc. I know of
: Lan-link,Hamwindows,PKgold,etc. What's good?

Using a KPC-3 on 2m exclusivly, I kind of like paKet. I, however, have
never seen any others, so I can't say yea or nay to it. I like it, though!

de N0ZAP / Michael

Date: Sat, 1 Oct 1994 14:17:26 +0000
From: zap@cpzap.xs4all.nl (Martin Heffels)
Subject: Graphic Packet in French

In article <ted1.42.2361FB2C@rsvl.unisys.com>
ted1@rsvl.unisys.com (Edward Stafford) writes:

> In article <93.2705.7582.0NFB3272@woodybbs.com> dave.baumwald@woodybbs.com (Dave
Baumwald) writes:
> >Subject: Graphic Packet in French
> >From: dave.baumwald@woodybbs.com (Dave Baumwald)
> >Date: Sun, 25 Sep 94 05:51:00 -0500
>
> >Jean please don't do this again! When the rest of us are trying to
> >scroll through messages, your program becomes a real pain in the "you
> >know what" Thanks.....
>
> Why not get a decent newsreader?

It'snot only a matter of getting a decent newsreader, some people have to
pay for their news (like me), and we don't like to see large binaries sent
this way.

73 de PE1EEC,

-martin-
e-mail: zap@cpzap.xs4all.nl

'I like all the different people. I like every kind of fair. In the crowd
you bet I'll be there! Walking around. Going nowhere. Seeing sooeey and
saints at the fair.' -|- Saints. The Breeders -|-

Date: 1 Oct 1994 20:51:43 GMT
From: carlson@RTD.COM (Wayne Carlson)
Subject: Mail forwarding on MFJ 1270

I have an MFJ 1270 (no suffix, one of their original boxes) that is upgraded with the version 1.2.9 EPROMs and extra RAM for mailbox support. Our BBS (using AA4RE software) forwards messages to my mailbox, but they get bounced back to the BBS because the forwarding flag is set to N on the incoming messages. A club member gave me his settings for his 1270C that gets its forwarding flag set to H from the same BBS (H I guess is for hold). I can't figure out any setting in the list that will do that for me. Does anyone have this setup working properly with a BBS?

Tnx es 73, Wayne, K2DT
carlson@rttd.com

Date: 1 Oct 1994 01:45:36 GMT
From: dlehnen@prairienet.org (Dan Lehnert)
Subject: Paket 6.1??

I have heard that there is a Paket 6.1 version out. Can anyone tell me where to find it.?

Paket Lover in Illinois.
--

Date: 1 Oct 1994 07:49:12 -0700
From: bnovak@kaiwan.com (Bob Novak)
Subject: Paket 6.1??

In article <36if00\$qpq@vixen.cso.uiuc.edu>,
dlehnen@prairienet.org (Dan Lehnert) wrote:

>
> I have heard that there is a Paket 6.1 version out. Can anyone tell
> me where to find it.?
>
> Paket Lover in Illinois.
> --

It's at FTP.FUNET.FI
/pub/ham/packet/terminal/paket61.zip

--

| E-Mail: bnovak@kaiwan.com | Packet: K00K@K6VE.#SOCA.CA.USA.NA |

Date: 1 Oct 1994 17:01:01 GMT
From: dlehnen@firefly.prairienet.org (Dan Lehnien)
Subject: Paket 6.1??

-=> Quoting Bnovak@kaiwan.com to All <=-

Bn> dlehnen@prairienet.org (Dan Lehnien) wrote:
>
> I have heard that there is a Paket 6.1 version out. Can anyone tell
> me where to find it.?
>
> Paket Lover in Illinois.
> --
Bn> It's at FTP.FUNET.FI
Bn> /pub/ham/packet/terminal/paket61.zip

Thanks, I appreciate that. Paket is a great program.

N9UWE
Dan

... Amateur Radio Operators have Extra Class!
___ Blue Wave/QWK v2.12

--

Date: Sat, 1 Oct 1994 05:47:10 GMT
From: gary@ke4zv.atl.ga.us (Gary Coffman)
Subject: Question: data bandwidth calculations?

In article <nickbCwwH47.EM4@netcom.com> nickb@netcom.com (Nicholas L. Barbieri) writes:

>Being a CS and not an EE, can someone please educate me on how I can
>calculate the bandwidth of a data signal? I'm talking FSK, about 56KB.
>Is there a general equation for bandwidth? I'm familiar with Fourier
>Series and Laplace transforms, so if there are any mathematicians with
>some patience out there, please explain the theory behind it.

For pure two level FSK, the math is rather simple. Twice the shift plus the symbol rate in baud will give you a close enough estimate of the required bandwidth. Example: a 200 Hz shift and a 300 baud symbol rate gives a required bandwidth of about 700 Hz. MSK modulation does considerably better at 1.4 Hz per baud, giving you a bandwidth of 420 Hz for a 300

baud MSK transmission. Much better still for high data rates is a more complex modulation that encodes more than one bit per baud. QAM is one method.

>What is this leading to? Well, I understand the main limiting factor
>for using voice radios for high-speed data is the IF frequency bandwidth.
>Okay, so I want to investigate redesigning an IF strip to widen the
>bandwidth. What are the standard parameters?

Actually the main limitation is the phase shift across the passband of the filter, and poor discriminator linearity. This distorts the eye pattern and makes slice decisions problematic. Phase distortion can be reduced at the cost of gentler filter slopes, but that hurts adjacent channel rejection. Some schemes attempt to *pre-distort* the signal waveform to compensate for these non-linearities, but that presupposes known receiver characteristics on the other end of the link.

Trying to push high speed data through a modified voice radio is in general a poor way to go. It's much better to use a radio modem designed from the ground up for data service. It'll have optimized RF modulators and demodulators for the chosen modulation form, and it will have filters optimized for the service. And it will typically be cheaper than the voice radio you would have to otherwise modify. See the GRAPES 56kb RF modem for an example. (A RF modem *is* the radio. The GRAPES unit uses MSK to pass 56 kilobaud symbol rates through a 70 kHz channel.)

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		emory!kd4nc!ke4zv!gary
534 Shannon Way		Guaranteed!		gary@ke4zv.atl.ga.us
Lawrenceville, GA 30244				

Date: Sat, 1 Oct 1994 19:44:18 GMT
From: cameron@netcom.com (Chris Jaeb)
Subject: WANTED: CELLULAR ENGINEER

--

cameron@netcom.com

Date: Sat, 1 Oct 1994 11:48:24
From: jeffmc@halcyon.com (Jeff McLeman)

References<1994Sep30.144630.28369@ve6mgs.ampr.org>
<frank.82.2E8C57AD@rover.uchicago.edu>, <1994Sep30.173038.28423@cc.usu.edu>
Subject: Re: operating system history..

In article <1994Sep30.173038.28423@cc.usu.edu> ivie@cc.usu.edu writes:
>Path: news.halcyon.com!nwnexus!news.sprintlink.net!howland.reston.ans.net!
cs.utexas.edu!news.cs.utah.edu!cc.usu.edu!ivie
>From: ivie@cc.usu.edu
>Newsgroups: rec.radio.amateur.digital.misc,alt.folklore.computers
>Subject: Re: operating system history..
>Message-ID: <1994Sep30.173038.28423@cc.usu.edu>
>Date: 30 Sep 94 17:30:38 MDT
>References: <199409282033.NAA19340@ucsd.edu>
<1994Sep30.144630.28369@ve6mgs.ampr.org> <frank.82.2E8C57AD@rover.uchicago.edu>
>Distribution: na
>Organization: Utah State University
>Lines: 23
>Xref: news.halcyon.com rec.radio.amateur.digital.misc:5200
alt.folklore.computers:77219

>In article <frank.82.2E8C57AD@rover.uchicago.edu>, frank@rover.uchicago.edu
(Frank R. Borger) writes:

>> Sad how history can get rewritten by someone who thinks their
>> favorite OS was the first one in the world, especially considering
>

>>
>> 8088/80286/etc were early implementations of PDP8 micros, and
>> CPM-DOS etc looked much like OS8.

>Sad how history can get rewritten by someone who thinks their favorite
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>I don't know which PDP-8 programming manuals you've been reading, but no
>matter how much I squint and screw up my eyes I just can't seem to make
>any of the Intel line look even vaguely like a PDP-8. The SC/MP, now, that
>I can make look kind of like the PDP-8...

>>
>> 'nuff said.

>Guess not.

>--

>-----+-----
>Roger Ivie | Don't think of it as a 'new' computer, think of it as
>ivie@cc.usu.edu | 'obsolete-ready'

The PDP8 (as well as DEC's PDP1, PDP4, PDP5 machines) were risc machines, or
should I say MISC (minimal instruction set computer). Though they were limited

to 32K (later we did a memory management unit for the PDP8/a to allow bank switching, which gave us 128K), one could be clever in writing programs to fit into 4K instruction and data pages.

OS8 was a derivative of a disk based OS that was written for the 8 using the DF32 disk file (A fixed head 32K storage unit).

Later, there was an augmentation to OS8 called RTS8. Richie Lary, who was one of DEC's PDP8 software gurus, wrote RTS8 for a special project.

If you have ever done a system build of OS8 to add a new handler, then you know you can really bone yourself if you're not careful. Maybe someone with folklore would know the message "There is no hope, there is not TTY" means.

I am sure Roger I. has done a few builds :-)

Jeff McLeman

(Former member of the PDP8 team for the PDP8a/VT78 (a PDP8 in a VT52 case))

Jeff McLeman

KD1IT/7

Internet: jeffmc@halcyon.com

AmprNet: kd1it@kd1it.ampr.org

Packet: kd1it@n7fsp.wa.usa.na

Interests: Digital modes (cw, rtty,
packet, amtor,
pactor, ect)

Date: Sat, 1 Oct 1994 11:53:21

From: jeffmc@halcyon.com (Jeff McLeman)

References<frank.82.2E8C57AD@rover.uchicago.edu>

<1994Sep30.173038.28423@cc.usu.edu>, <10CT199406574292@erich.triumf.ca>

Subject: Re: operating system history..

In article <10CT199406574292@erich.triumf.ca> ivan@erich.triumf.ca (Ivan D. Reid) writes:

>Path: news.halcyon.com!nwnexus!news.sprintlink.net!howland.reston.ans.net!agate!
library.ucla.edu!news.mic.ucla.edu!unixg.ubc.ca!erich.triumf.ca!ivan

>From: ivan@erich.triumf.ca (Ivan D. Reid)

>Newsgroups: rec.radio.amateur.digital.misc,alt.folklore.computers

>Subject: Re: operating system history..

>Date: 1 Oct 1994 06:57 PST

>Organization: TRIUMF: Tri-University Meson Facility

>Lines: 16

>Distribution: na
>Message-ID: <10CT199406574292@erich.triumf.ca>
>References: <199409282033.NAA19340@ucsd.edu>
<1994Sep30.144630.28369@ve6mgs.ampr.org> <frank.82.2E8C57AD@rover.uchicago.edu>
<1994Sep30.173038.28423@cc.usu.edu>
>NNTP-Posting-Host: erich.triumf.ca
>News-Software: VAX/VMS VNEWS 1.41
>Xref: news.halcyon.com rec.radio.amateur.digital.misc:5204
alt.folklore.computers:77252

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>>I can make look kind of like the PDP-8...

> Can't say I noticed it particularly myself, and I jumped directly
>from the one to the other. There was a microprocessor, name forgotten, that
>did implement a PDP-8. The seismologists at Adelaide University used it for
>their portable field seismometers -- I think the reason was that it was CMOS
>and used a lot less power than the SC/MPs we were using in the Antarctic
>Interferometer, so it could run a long time on batteries. Naturally, because
>of the way the PDP-8 implements subroutine calls, they had the programme
>stored in ROM but had to load it into RAM when booting.

>Ivan Reid, Paul Scherrer Institute, CH. ivan@cvax.psi.ch

The Harris 6120 implemented the PDP8 instruction set. DEC used it in 4
products: VT78, VT278, DECmate II and DECmate III

It also had a mode call panel mode. Panel mode allow you to create
"instructions", if you will, or subroutines to handle functions.

What's interesting is that DEC's current Alpha processor has a mode called
PALmode, which allows you to basically do the same thing....
(Alpha's PALmode is actually a descendant of EpiCode, which was used in a
canceled RISC machine that DEC was doing, until the politics got involved. The
cancellation prompted the departure of DEC's best OS and HW architects to
Microsoft. The end result is Windows NT.)

Jeff McLeman
(Former PDP8 engineering team member)

Jeff McLeman
KD1IT/7

Internet: jeffmc@halcyon.com
AmprNet: kd1it@kd1it.ampr.org

Packet: kd1it@n7fsp.wa.usa.na

Interests: Digital modes (cw, rtty,
packet, amtor,
pactor, ect)

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Ivan Reid, Paul Scherrer Institute, CH. ivan@cvax.psi.ch

Date: Sat, 1 Oct 1994 10:30:10 GMT
From: tcj@netcom.com (Todd Jonz)

References<Cw74yF.5Jo@kd3bj.uucp> <1994Sep22.121710.19265@city.ac.uk>,
<Cw7nGx.B1s@kd3bj.uucp>
Subject: Re: Unix vs DOS vs OS/2 vs NT

Clifton T. Sharp (clifto@indep1.chi.il.us) writes:

> Heck, _DOS_ came from CP/M. The guy who wrote it wanted a quick O/S
> and basically wrote a sort of a version of CP/M for 8086.

Back in the days when CP/M and the S-100 bus rules the microcomputing world,
a company called Seattle Computer was having trouble moving its 8086-based

single-board computer because it didn't run CP/M. In an attempt to improve its marketability, they had Tim Patterson, a staff engineer, write a simple loader and file system that they dubbed SB-86 (as in "single-board 8086") and gave it away with the board. Since CP/M was the de facto standard in that market at that time, SB-86 looked a lot like CP/M.

When Digital Research made the fatal mistake of trying to play hardball with IBM and fumbled the opportunity to provide the OS for the original IBM-PC, IBM turned to Microsoft, from whom they had already licensed BASIC. Microsoft was into language products almost exclusively in those days, so Big Bill went down the street to Seattle COmputer and, without tipping his hand, bought both SB-86 and Tim Patterson for a song. Thus DOS 1.0 was born.

C. T. Nadovich (chris@kd3bj.uucp) writes:

- > consider the list of similarities.... The list is pretty long. Many
- > aspects of DOS 2.0 were inspired by unix

It was no coincidence that DOS 2.0 bore a striking resemblance to UNIX. Microsoft had developed a taste for operating systems, or rather the revenue they generated. Knowing that DOS was a toy, Microsoft's "strategic" OS when they released DOS 2.0 was XENIX, and they envisioned that one day the two would merge. That, of course, was before OS/2 became the strategic OS, which was before Windows became strategic OS, which was before NT became the strategic OS....

Microcomputing history buffs who want a real good laugh should try to dig up some of the Microsoft/IBM marketing propaganda that accompanied the first release of OS/2 and compare it to the current NT hype. The similarities are positively frightening!

KB6JXT, Todd

Date: 30 Sep 94 17:30:38 MDT
From: ivie@cc.usu.edu

References<199409282033.NAA19340@ucsd.edu>
<1994Sep30.144630.28369@ve6mgs.ampr.org>, <frank.82.2E8C57AD@rover.uchicago.edu>
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ivie@cc.usu.edu | 'obsolete-ready'

End of Ham-Digital Digest V94 #327
